

THE PERSIMMON STORY

Japan Persimmons:

Since its successful introduction in this country in 1875, the Japan Persimmon (*Diospyros Kaki*) has been slowly but steadily gaining in favor. Since native Persimmon seedlings (*Diospyros Virginiana*) are used as stocks on which to grow the Japan sorts, they can be grown on as wide a range of soil as the native Persimmon, and it is not too much to say that they will succeed with the minimum of care and attention with which any fruit may be successfully grown. At the same time, they respond generously to good care and cultivation. The trees are vigorous, prolific and have few enemies. Some varieties are weakened because of their habit of overbearing, and their crop should be thinned. The region in which the Japan Persimmon may be grown covers the cotton-growing belt.

As the fruit keeps and ships well, it can be placed on the market in good condition, though it requires some experience to know just when the different varieties are in best shipping condition. Wherever known in the markets, it meets with ready sale.

A carefully selected list of varieties will give fruit in abundance from August to December and later. During a very considerable portion of this period other fruit crops are out of season.

Planting and Management

The soil on which the Persimmon orchard is set should be well prepared. Old field land may be used, but, if in poor condition, it should be built up before setting the trees. This can best be done by growing a crop of cow peas, velvet beans, or crota-laria on the land and plowing them under previous to planting.

While Persimmon trees can be set out at any time between November 15 and March 1, in the lower South, preference in planting should be given to the period from December 1 to February 1. They should be given a distance of 18 to 20 feet apart each way, 134 or 108 trees per acre. Great care should be exercised in setting them, and the roots should not be allowed to become dried out. The tops should be cut back to 2 or 2½ feet on the smaller sizes.

Cultivation during the early portion of the season should be frequent and thorough, but not deep. This may be discontinued about July 1 or 15, and a cover crop of natural weeds or cowpeas or beggarweed should be allowed to cover the ground. To avoid danger from fire during winter, this should be turned into the soil after it has become dead and dry in autumn. Satisfactory growth has been derived from the use of the ordinary commercial fertilizers analyzing 4-6 percent nitrogen, 8-10 percent phosphoric acid and 3-6 percent potash. As a general rule one pound of fertilizer per year of age of the tree may be applied, i.e., a tree four years old would receive four pounds. The fertilizer should be spread in a wide band about the tree. Usually two applications of fertilizer per year are better than one; first being made in the spring, about the time the trees start to bud out, with the second being applied in July. When two applications are made, the amount of commercial fertilizer as suggested above should be split into two even parts.

Marketing Japan Persimmons:

The fruit should be gathered when fully grown but before the softening process begins, if it is intended for long-distance shipment. It should be cut from the trees and handled very carefully to prevent bruising. It is usually best, even when the fruit is intended for home use, to gather it before it begins to soften, and ripen it in a dry warm room. The flavor is quite as good as when ripened on the trees.

Immediately after picking, the fruit may be packed for shipment. The best crate is the six-basket carrier commonly used for peaches. Small specimens should be discarded and the fruit should be carefully graded for size. Wrap the fruits in a good quality of fruit wrapping paper and arrange them in the baskets in regular order according to size. There is considerable work now being done on improved shipping containers, such as three-layer packs in a cardboard box. Some system that would hold the fruit firmly in place without fruit to fruit contact would be desirable, similar to an oversize egg carton. If the fruit is sent into a new market a card giving the name of the fruit, stating the degree of maturity at which it is best and giving directions on how to use it, should be placed in each crate or better still in each basket. This will prevent attempts at eating it before well ripened and will create a favorable impression of the fruit.

Cause and Cure of Dropping

In 1909 we discovered the cause of the dropping of immature or partly developed Persimmon fruit, and, from that date until the present, much time and study have been given the problem.

Examine the pistillate flowers of a Japan Persimmon and it will be noted at once that there is no pollen in them to fertilize the pistils and cause seed to form and fruit to set. This was our first discovery. Then, in April, 1909, we found that another kind of flower is sometimes borne on Japan Persimmon trees. These were entirely different in shape, smaller in size, and contained well-developed stamens with plenty of pollen. Only three flowers were found then, but the pollen from these was used on the blossoms of varieties that would not hold their fruit, and the fruit matured. During the seasons following thousands upon thousands of hand pollinations were made, with uniformly good results. The fruits held and grew to maturity.

The next step was to find a Japan Persimmon that could be depended on to produce pollen-bearing flowers every year. This was found later in 1909, and in 1915 we introduced the Gailey Persimmon. This variety has been tested out in orchard plantings, and its pollen carried by bees and other insects has caused good crops of fruit to set. The pollen from native Persimmon trees will not help. Although many thousands of hand pollinations have been made with native Persimmon pollen, so far no seed has been secured and the pollen of the native Persimmon has not helped the setting of fruits on the Japanese varieties. Hence the Persimmons planted to furnish pollen for the Japanese Persimmon must also belong to the same group.

Gailey Persimmon Introduced

We introduced the Gailey Persimmon in 1915. It is not recommended for its fruit, for, though good, it is small, but it is introduced to be planted along with other varieties to supply their flowers with pollen and insure crops of fruit. One tree of Gailey should be planted with every seven or eight of every variety of our list, except Tane-Nashi. Tane-Nashi will hold fruit without pollination.

Now, it must not be expected the presence of Gailey trees in an orchard will cause every flower to set fruit. It would be a misfortune if it did that, for the trees would be so overloaded that they could not thrive. Neither will they take the place of suitable soil and climate, good care, good cultivation, cover-crops and fertilizer; but, given these, Gailey will insure crops of fruit on Japan Persimmon trees.

Introduction of Fuyugaki

In connection with our Persimmon investigations which led up to the discovery of why the trees dropped their fruit, and the introduction of staminate Persimmon varieties, we introduced and have tested a very large number of varieties from different parts of the world. Among these Persimmons was one sent us by the section of Seed and Plant Introduction, U. S. Department of Agriculture, Washington, D. C., in 1913, under the name Fuyugaki. This variety possesses several characteristics which place it in a class by itself. So far as our observation goes it is never astringent, it is always light fleshed, it is edible while still hard and may be peeled and eaten like an apple. It keeps well, and in quality it is one of the very best. The fruit is of medium size, rather flattened, beautiful deep red in color, and the tree is very prolific. It can be placed on the market while still hard, and can be eaten without waiting for the fruit to soften. September-October.

Notes on Varieties

Some of the varieties have dark flesh, others light flesh, still others a mixture of the two. The light and dark flesh differ radically in texture and consistency, as well as appearance, and when found in the same fruit are never blended, but always distinct. The dark flesh is never astringent, the light flesh is astringent until it softens. The dark fleshed fruit is crisp and meaty, like an apple, and is edible before it matures. Some of the entirely dark fleshed kinds improve as they soften like Hyakume, others are best when still hard, like Fuyugaki, Zengi and Taber No. 23. As they are good to eat before they are ripe, it is not so important that the dark fleshed kinds be allowed to reach a certain stage before being offered to consumers unfamiliar with the fruit. The light fleshed kinds and those with mixed light and dark flesh are very delicious when they reach the custard-like consistency of full ripeness. In some, the astringency disappears as the fruit begins to soften, as with Okame and Tane-Nashi; in others it persists until the fruit is fully ripe as with Tsuru. The light fleshed kinds should not be offered to consumers unacquainted with the fruit until in condition to be eaten. A person who has attempted to eat one of them when green and "puckery" will not be quick to repeat the experiment. The "puckery" substance in the immature Persimmon is tannic acid. As the fruit ripens, the tannic acid forms into crystals which do not dissolve in the mouth, and in this way the astringency disappears. Seeds accompany the dark flesh. The light fleshed kinds are usually seedless. The kinds with mixed flesh have seeds in proportion to the quantity of dark flesh.

FUYUGAKI: See "Introduction of Fuyugaki" for description.

GAILEY: Small oblate-conical, apex rounded, with small sharp point often marked with circular lines; color dull red, surface pebbled; flesh dark about the seeds, meaty, firm, juicy; seeds flat, oval, rather long. This variety is noteworthy for the production of staminate flowers for the pollination of the pistillate flowers of other varieties. Original tree on our grounds near Eagle Lake, Florida. Recommended for its flowers, but not for its fruit.

HACHIYA: Very large, oblong, conical, with short point; very showy; diameter $3\frac{3}{4}$ inches longitudinally and $3\frac{1}{2}$ inches transversely; skin bright dark red, with occasional dark spots or blotches and rings at the apex; flesh deep yellow, with seed. Astringent until ripe, then very fine. The largest and handsomest of all. Tree vigorous.

HYAKUME: Large to very large, varying from roundish oblong to roundish oblate, but always somewhat flattened at both ends; generally slightly depressed at the point opposite the stem: diameter $2\frac{3}{8}$ inches longitudinally and $3\frac{1}{8}$ inches transversely; skin light buff-yellow, nearly always marked with rings and veins at the apex; flesh dark brown, sweet, crisp and meaty, not astringent; good while still hard. The tree is of good growth and a free bearer.

OKAME: Large, roundish oblate, with well defined quarter marks, point not depressed; diameter $2\frac{3}{8}$ inches longitudinally and $3\frac{1}{8}$ inches transversely; skin orange-yellow, changing to brilliant carmine, with delicate bloom and waxy, translucent appearance; light clear flesh when ripe, with light brown center around the seeds, of which it has several; loses its astringency as soon as it begins to ripen; quality fine. Tree strong, vigorous in growth and a good bearer.

ORMOND: Small to medium, $2\frac{5}{8}$ by $1\frac{7}{8}$ inches, conical, smooth; apex tapering, sharp, not creased, or only slightly marked; base rounded to the firmly attached, strongly reflexed calyx; color deep bright red with thin bloom; skin thin, tough; flesh orange-red; meaty, or jelly-like when fully ripe; seeds large, long, pointed. Quality very good. Ripens late (December) and may be kept for a long time after being gathered.

TABER'S NO. 23: Medium oblate, flat or depressed point; $1\frac{1}{8}$ inches by $2\frac{3}{8}$ inches; skin rather dark red, with peculiar stipple marks; flesh dark brown, sweet and free from astringency; seeds, good. Prolific.

TAMOPAN: Fruit large to very large, specimens often weighing one pound each; flattened, oddly marked by constriction about the middle; color golden red; fruit astringent until fully ripe; quality very fine; a vigorous grower and makes a large tree.

TANE-NASHI: Large to very large, roundish conical, pointed, very smooth and symmetrical; diameter $3\frac{1}{4}$ inches longitudinally and $3\frac{3}{8}$ inches transversely; skin light yellow, changing to bright red; flesh yellow and seedless; quality very fine; perhaps the most highly esteemed of the light-fleshed kinds. Vigorous; prolific. Uniform size, quality and shape combine to make this the most desirable market variety.

TSURU: Large, slender, pointed; longest of all in proportion to its size; diameter $3\frac{3}{8}$ inches longitudinally and $2\frac{3}{8}$ inches transversely; skin bright red; flesh orange-yellow astringent until fully ripe, quality good. Ripens very late. Tree vigorous; good bearer.

ZENGI: The smallest of all; round or roundish oblate; diameter; $1\frac{3}{4}$ inches longitudinally and $2\frac{1}{4}$ inches transversely; skin yellowish red; flesh very dark, quality good; seedy, edible when still hard; one of the earliest. Vigorous and prolific.

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